

TRANSCRIPT

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into the 2022 Flood Event in Victoria

Melbourne – Wednesday 6 December 2023

MEMBERS

Ryan Batchelor – Chair

David Ettershank – Deputy Chair

Melina Bath

Gaelle Broad

Jacinta Ermacora

Wendy Lovell

Samantha Ratnam

Rikkie-Lee Tyrrell

Sheena Watt

PARTICIPATING MEMBERS

John Berger

Ann-Marie Hermans

Joe McCracken

Evan Mulholland

Rachel Payne

WITNESS

Harriet Shing, Minister for Water.

The CHAIR: I declare open the committee's public hearing for the Inquiry into the 2022 Flood Event in Victoria. This is a public hearing for the Environment and Planning Committee, an all-party committee of the Legislative Council of the Victorian Parliament looking into the October flooding event. We will be providing a report to the Parliament next year, which will include recommendations to the government. Can everyone please ensure their mobile phones are switched off or on silent and minimise background noise.

I will begin by acknowledging the traditional owners of the land we are meeting on here today. I pay my respects to elders past and present and acknowledge any Aboriginal and Torres Strait Islander people who are participating in today's hearing. I welcome any members of the public in the gallery or tuning in online and remind those in the room to please be respectful of proceedings and to remain silent at all times.

Minister, I am sure you are aware that all evidence taken is protected by parliamentary privilege as provided by the *Constitution Act 1975* and the provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during the hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false evidence or misleading of the committee may be considered a contempt of Parliament.

All evidence is being recorded. You will be provided with a proof version of the transcript following the hearing, and transcripts will ultimately be made public and posted on the committee's website.

You probably know everyone here, but for those watching along at home I will get the committee members to introduce themselves. I might start online with Ms Broad.

Gaelle BROAD: Hi, Minister Shing. Gaelle Broad, Member for Northern Victoria.

Harriet SHING: Hi, Gaelle.

Jacinta ERMACORA: Good morning. Jacinta Ermacora, Western Victoria.

Samantha RATNAM: Good morning. Samantha Ratnam, Northern Metropolitan.

David ETTERS HANK: David Ettershank, Western Metro.

Wendy LOVELL: Wendy Lovell, Northern Victoria.

Rikkie-Lee TYRRELL: Rikkie-Lee Tyrrell, Northern Victoria.

The CHAIR: Ryan Batchelor, Southern Metro and Chair of this committee. Welcome, Minister. We will invite you to make an opening statement of about 10 minutes, should you so choose.

Harriet SHING: Thank you, Chair, and thank you, members who are here in the room and also those who are appearing online today. I would like to begin this morning by acknowledging the Wurundjeri people, who are the traditional owners of the lands upon which we are gathered. I pay my respects to their elders past and present. I also want to acknowledge any and all Aboriginal or Torres Strait Islander leaders or emerging leaders who are part of this work, who are part of the scope of this inquiry or indeed who are working so hard across the sector as part of the response relief and recovery efforts.

I have, in the water portfolio, responsibility for the *Water Act 1989*, the *Water Industry Act 1994* and the *Catchment and Land Protection Act 1994*, in a several sense. Oversight in the policy directions of the portfolio vests in the executive, but as my role entails, the *Water Act 1989* enables and requires me to ensure effective management of the state's water resources, oversight of water authorities and the Victorian Environmental Water Holder and delivery of government policies and programs, catchment and waterway health infrastructure and water savings, flood management, urban water and community programs.

DEECA – an initialism which would be familiar to all of you now, the Department of Energy, Environment and Climate Action – supports me as minister to acquit portfolio responsibilities by developing guidance and policy for the water sector, such as the *Victorian Floodplain Management Strategy*, which we will no doubt talk about at length today. Powers are delegated to water corporations and CMAs – catchment management authorities – in such instances as the operation of storages and day-to-day operational matters. The DEECA water and catchments group, water corporations and CMAs have roles and responsibilities under the state emergency management plan – the SEMP – in accordance with the *Emergency Management Act 2013*. DEECA is the control agency for four class 2 water emergencies, including dam safety, water and wastewater service disruption, blue-green algae and non-hazardous pollution of inland waters. So when I talk about the water sector I am referring to our water corporations, catchment management authorities and also the DEECA water and catchments group.

In beginning my statement today I want to firstly acknowledge and extend my thanks and respect to all of the water corporation and catchment management authorities and staff, volunteers, councils, DEECA staff and other government departmental and agency staff who worked so tirelessly throughout the 2022 floods on 14 October and thereafter to make and keep people safe and to protect and reinstate essential infrastructure while they also did everything possible to restore interrupted services. Water sector staff and volunteers were really central to response and to recovery work, and often it was locals themselves who were being inundated while they were working around the clock to protect and to restore essential infrastructure. During the floods and in that period immediately afterwards, including as part of State Control Centre work, the water sector contributed more than 140,000 hours of work around the state and responded to over 220 incidents, including water and wastewater disruptions, dam safety events, fish deaths and keeping the sewerage systems running. A really great example of the way in which this occurred on the ground was Coliban Water working around the clock, as I said, in Rochester to restore the sewer system within a matter of days after the peak of the flood rather than what might otherwise have taken many weeks to achieve.

As we all know, the work does not stop once the peak of the flood has occurred and floodwaters are beginning to pass. People in communities and across all levels of government continue to work really hard to make sure that long-term recovery priorities are identified, that support and resourcing is afforded to communities in need, that we continue to build upon our understanding of the way in which flood events occur and the challenges and also opportunities that the aggregation of data collection enables us to do by way of better response and ongoing improvement.

As the committee has heard at several hearings already, the water sector plays a really important role in the VICSES response as a control agency during emergencies. We had an active presence of the DEECA team in the State Control Centre over a 40-day period. That included more than 191 shifts in control and support roles, such as the deputy response controller and water service specialists. This speaks in very large part to the importance of interoperability capability and response from agencies. That is laid out in flood management in emergency frameworks already. Under the state emergency management plan, DEECA's water and catchments group has specific roles and responsibilities under the control agency for those emergencies I have just talked to. A mutual aid was a really important part of the work that the sector did to make resources and expertise available from all over the state to meet the need when and as it occurred, including by way of lending plant and equipment to areas where essential infrastructure response was needed. This was a really strong example of collaboration that builds upon the continuous improvement that we see in floods and natural disasters and response.

In the days, weeks and months since the floods took place I have visited and met with many communities, organisations and representatives across flood-affected areas of the state, and I continue this work now. I coordinated meetings with chairs and with CEOs of water authorities and CMAs for updates and information on the work that they were doing in the immediate aftermath of the floods. I stayed in regular contact with those in immediate flood areas. I have visited Alexandra, Benalla, Echuca, Rochester and Elmore. There is the work that we have seen at Lake Eppalock and the work in Molesworth and surrounding areas impacted by the floods, along with talking with councils and members of regional partnerships. I have been to Mildura on a number of occasions, again to understand the long-term impact of flood, and I continue to work alongside CMAs and authorities to see the ongoing recovery that is occurring, including in the Maribyrnong area as it affected flood-prone areas across the metropolitan area.

Again, this is about ongoing engagement. It spans a number of government portfolios, obviously emergency management, regional development, water. There are ongoing efforts being undertaken by the Minister for Local Government, and we continue to work in partnership with the Commonwealth government as well, with around \$1.8 billion either funded or committed to ensure that flood recovery efforts can continue. We are also working in long-term improvement and assessment around what we do to maximise capability for response and for preparedness. This is all part of the work associated with resilience and with mitigation and with preparedness through best practice and better practice and continuous improvement in the way in which information is aggregated and shared in the event of flood risk and escalated risk and also waterway management and the infrastructure challenges and opportunities that exist there. And that may relate to anything from levees right through to flood management strategies, plans and partnerships with council and also understanding where and how water authorities and CMAs play a role in that work over time. Chair, I am not sure how I am going for time.

The CHAIR: You have got about a minute and a half left.

Harriet SHING: Excellent. So the *Victorian Floodplain Management Strategy* is obviously a key part of that, and we have storage management and technical assessments which you have also heard about in the course of this committee's work as it relates to Eildon and to Eppalock – the Eppalock assessment having been released already and the Eildon assessment being released in the first part of next year – including in the management of water storages and the priorities that we see as being brought to bear now and into the future, particularly against the backdrop of climate change and the need to ensure water security.

Ongoing resilience will take many years, and I am under no illusions about the difficulties being faced by communities and that continue to be faced by communities. That is where our work as governments of all levels needs to continue to meet that assistance required but also to provide that measure of resilience and partnership. A range of other supports and assistance mechanisms – no doubt we will be able to get into the detail of that, Chair. So with those remarks I will look forward to your questions.

The CHAIR: Thank you very much, Minister. We are all going to have about 10 minutes, give or take, for questions. I might start just on the last point, which is about resilience. One of the things we obviously are aware of is that these rare events are becoming more common and communities, particularly those who live near water who are at risk of flooding, are increasingly going to face the risk of flooding events. I wonder if you could expand a bit on what you think government can do – and it could be any level of government – to further build flood resistance in potentially flood-affected communities.

Harriet SHING: Yes, absolutely. Thank you, Chair, for that. In October 2022 Victoria experienced one of the most significant flood events on record, and this came off the back of what occurred in 2011 with those flood events that occurred across large parts of the state. The immediate response process, as I have indicated, related to about 220 incidents within the water and catchments space. That is against the backdrop of hundreds of incidents being responded to, including through the emergency management space, the State Control Centre and others.

I am going to confine my comments in this space on resilience and preparedness and mitigation to the water sector, so I hope that it will not be interpreted as occurring in isolation, because interoperability is the essence of the work that we are doing as a government and that all levels of government continue to work on. We have worked to provide funding to repair critical water infrastructure and restore waterways and catchments. That is a provision of about \$22 million to CMAs and water corporations. There is also around \$20.5 million to impacted water corporations to continue to support the sector in recovering from the flood event through repairs and restoration, and there has been water bill assistance to people who were either inundated or who were isolated as a consequence of the flood events.

But priority work beyond repair and beyond maintenance goes to the sorts of studies and the collation of data to update and to improve modelling to make sure that flood management plans and studies and information around the flood risk are able to be understood and applied to local areas. We know that, from the Comrie review and from the development of the flood management strategy, it is really important to be able to understand the impact of a range of factors on flood-prone areas. That may be because of flooding events, it may be because of existing saturation in soil environments and it may also be because of the way in which highly modified river systems are impacted by large volumes of water moving downstream.

And as we see right across the state, population growth is one of the really significant factors in the way in which flood mitigation and preparedness needs to occur. In Melbourne we will see a population around the size of London by about 2050, and this is where the interaction between the work of local councils is so important with catchment management authorities, water corporations and communities to have an abundance of information and to make sure that all levels of decision-making authority are well equipped to understand the nature of risk. We cannot remove risk entirely, but we can and we need to mitigate against it.

Resilience also speaks to preparedness, and that is about making sure that within communities planning approvals frameworks have taken really proactive decisions to manage risk but also that communities have access to information to ensure that they can make decisions that are right for them as floods or indeed any natural disasters occur. And we know around rural and regional Victoria bushfires, floods, droughts and other natural disasters are a really significant challenge for many communities. The resilience that we see throughout our communities is, as I have said to so many communities themselves and as I continue to say, nothing short of extraordinary, but the floods tested that resilience and have left people really depleted. This is where, again, increasing that resilience, building that back up again, is so important to making sure that in the aftermath of that trauma we have a range of supports in place, whether that is emergency and community hubs, access to services, assistance with financial hardship or the preparedness that will give people a measure of comfort around risk and around future risk – because when areas flood, the sound of rain on a roof is enough to take people right back to those moments of extreme vulnerability and in many instances of loss and of enormous anguish. So that is where resilience is of crucial importance in working alongside and with communities and making sure that they have what they need and that we are able to respond to what they are telling us that they need, and that is where emergency management is of crucial importance.

The CHAIR: Thank you, Minister. We have got some evidence about post-traumatic mental health later today, so that will be good. I might save my remaining 4 minutes until later. Mr Ettershank, do you want to go now?

David ETTERS HANK: Thank you, Chair. Thank you, Minister, for coming today. It is much appreciated – really appreciated.

Harriet SHING: Thanks, Mr Ettershank.

David ETTERS HANK: Maybe a couple of quick ones just to kick off. Looking at the Pagone report into Melbourne Water, recommendation 13 referred to basically Melbourne Water undertaking an investigation into how things got so horribly wrong by way of the flood levels for the Rivervue Retirement Village. Melbourne Water indicated in their response to that recommendation that they would have a report out by the end of the year. I am wondering if you have seen that report.

Harriet SHING: We have a lot of work being undertaken at the moment by Melbourne Water and its investigations into Rivervue. This is a site with a really long history of development, of planning and of decision-making, and the matters raised in the recommendation that you have identified relate to Melbourne Water investigating how it came to be satisfied with the reduction of flood levels and finished floor levels at the Rivervue Retirement Village. Melbourne Water is working to complete its investigations by the end of the year, and they also acknowledge that there are some elements of timing that may be outside their control. That is a matter for Melbourne Water and the submissions that they have made, not only to the review by Judge Pagone but also I think in the submission that has been provided to this inquiry. Multiple parties have been involved in this work, and that includes the developer, Melbourne Water, Moonee Valley City Council, VCAT and also Planning Panels Victoria. It is a very intricate issue, as I am sure you will appreciate. There are also really significant technical issues, and they require careful consideration. As I understand it, the investigations are expected to be completed by the end of this year. I have not seen any investigations, because I understand that they are yet to be finalised.

David ETTERS HANK: Okay. I guess there are two subsequent questions that follow on from that. One would be: I think the last report that went to Melbourne Water – Justice Pagone's report – sat with the CEO for a month and a half, roughly, before it was released. So I guess the committee would be very keen, given we have obviously got work coming up, to know: will that be released as soon as it is available?

Harriet SHING: I am really happy to take that on notice in terms of the work on Rivervue and on that investigation. As I have made really clear to this committee and in response to members of this committee and in response to questions in Parliament, I have been provided with information as it has been released to the public. So I am really happy to take that on notice perhaps and give you a better sense of what the timing might look like.

David ETTERS HANK: Terrific. All right, thank you. Could I ask: will that similarly apply for the Melbourne Water flood modelling? Judge Pagone indicated he had problems with two of his terms of reference that could not be answered in the absence of that new flood modelling, and we are in a similar situation. Melbourne Water has indicated it will have that flood modelling by April. Without pre-empting the deliberations of the committee, that is very much unfinished business that we will have to address later in the year, probably.

Harriet SHING: Yes. I think there are a couple of recommendations that you are referring to there, Mr Ettershank: recommendations 6 and 9. One of those relates to the hydraulic model being developed, scheduled for completion in April next year, and the determination of the impact of the Flemington flood wall and efficacy of associated downstream compensatory works. Melbourne Water is in the process of finalising what has been a really complex year-long hydraulic modelling project. That will provide a final confirmation on the overall impact for completion in April, as you have indicated. Melbourne Water will then utilise that model to undertake analysis to determine impact, so the recommendation is, axiomatically, a precursor to that further work that will be undertaken. Melbourne Water has in fact written to the independent panel to propose that it reconvene to review that assessment in accordance with the terms of reference, so again there is an adjacent process there. Melbourne Water has also commenced updating the Maribyrnong River model, which is, again, part of that work to be completed in April next year, and that will be a 2D model in accordance with the latest standards, including climate projections. This is an increasingly common feature of the way in which assessments, modelling and risk management are being undertaken, and there is an interim recalibrated model produced for the mid-Maribyrnong, and that will provide guidance for planning and development and emergency management purposes.

David ETTERS HANK: Has that actually been already produced?

Harriet SHING: Well, it is an interim process, so there is work that is well underway to finalise an updated model, and that will be based on a range of data points that have been aggregated as a consequence of October and then larger scale events that have occurred in the past. So we know that where we see information about where and how water moves across a system one of the best things we can do is to gather data around what has happened and then to inform the work that we are doing, and this is related to that FloodZoom and the way in which we have internal processes to assist in, not a prediction, but the best possible understanding of what might occur. That is then part of the Digital Twin Victoria work as an outward-facing opportunity for people to get access to information beyond that highly technical work. So there is interim work that is in place – again, of course to make sure that risk is understood and mitigations are in place, but we need to wait to see what happens in April.

David ETTERS HANK: Okay, thank you for that. I am interested in the situation of the residents of Maribyrnong and the Rivervue, both obviously close to home – or in my front yard. I think we are 14 months since the flood now, and I think we have only just got the first planning permits that have gone through. I want to come back to planning permits in a second, time permitting, but I guess in terms of the situation of the roughly 600 households that went under, has the government formed a view as to what the long-term options for the Maribyrnong precinct might look like in terms of buybacks, levees, the Arundel retarding basin and suchlike?

Harriet SHING: There is a lot in that, so I am really happy, perhaps, to work through a couple of elements of that. I just want to also acknowledge that more than 600 households were affected across the Moonee Valley, Maribyrnong and broader areas of the Maribyrnong catchment, but all around regional Victoria we are talking about thousands of impacted homes and properties. So this is work that we need to continue to refine and to improve, and this is where again the release of \$5 million in additional funding for flood studies has been particularly important and the incorporation of climate change as an impact on the risk profile that is being contemplated across flood-prone areas and future decision-making. I have just touched on the Flemington flood wall and the further work that will be done there as a consequence of the Pagone review, and that further work

around modelling and a further review and assessment process by the panel has reconvened. But it is also important to understand that the themes of inundation and of risk are similar around what that means and the way in which we need to work across all levels of government. The way that they manifest varies dramatically depending on geography, depending on where areas have been built up and depending on planning and approval frameworks that exist within individual council areas. The housing statement, as you may be aware, also contemplates the impact of climate change in the development and the planning for that growth. Across the state, again, population growth and climate change have really coalesced to present a range of challenges around how we respond to natural disaster. That also includes consideration of matters like Arundel, so we can perhaps deal with those in a list, given the time that you do not have available to you.

David ETTERS HANK: Okay. So in terms of things like asset buybacks in Maribyrnong, is that under active consideration by the government?

Harriet SHING: When we look at Arundel, for example, there have been a number of processes whereby Arundel has been contemplated. It has been put as an option, but cost, the acquisition of properties and the impact on biodiversity, including the Organ Pipes National Park – these are all factors at play.

David ETTERS HANK: Sure. I was not actually talking about Arundel.

Harriet SHING: Oh, sorry. You referred to it. Sorry.

David ETTERS HANK: I am talking about buying back homes in Maribyrnong rather than using ‘assets’, the technical term.

Harriet SHING: Again, this is about flood mitigation and about risk management and preparedness. There may well be questions for the Minister for Planning or for another minister, but my work within the *Water Act* itself is relatively confined in that regard.

David ETTERS HANK: Good answer. Alrighty. I just wanted to briefly mention –

The CHAIR: Fifteen seconds – go.

Harriet SHING: Okay.

David ETTERS HANK: The 173 agreement – no, it is all right; we will come back to that one.

Harriet SHING: Yes, we can come back to it.

David ETTERS HANK: We will deal with those separately. That will be fine. Thank you. Thank you, Minister.

Harriet SHING: Thanks.

The CHAIR: Thank you, Mr Ettershank. Ms Broad.

Gaëlle BROAD: Thank you very much, Minister. I guess we have got brief time, so feel free, if there are any you are not sure on, to take them on notice.

Harriet SHING: Yes.

Gaëlle BROAD: I am interested in a number from one to 10. How do you feel your government’s response has been in regard to the floods? How would you rate the government’s response?

Harriet SHING: Right. The government’s response to the floods – I appreciate that you are after a really pithy answer, but there is not a pithy answer to this because it is a whole-of-government response. It is all three levels of government. It is working with and for and on behalf of communities, and the response is about three different components – it is rescue, relief and recovery. There are always opportunities to improve, and that is why data collection is so important. It is ongoing engagement and forums and discussions and consultative committee work, whether that relates to the development of levees or to an understanding of risk profile in a scenario of climate change volatility. It is about understanding a range of factors.

Gaelle BROAD: I mean, the department of transport was able to give a number, so maybe if you just confine it to your department and your responsibilities, how would you rate it?

Harriet SHING: Again, others might give numbers – I am not going to, because I think that to distil this into a single word does not do justice to the ongoing work of recovery. Recovery needs to continue for years, and I think if I provide you with a static answer now I am ignoring the reality that, as with bushfires, work continues for decades to make sure that we respond and respond well. We are still recovering and responding from 2011. Lismore is still guiding the work that we are doing to understand and improve on modelling. Others may wish to ascribe a number; I am not intending to be drawn on something that seeks to crystallise what is a really complex area of policy and regulation but also a partnership across agencies and portfolios.

Gaelle BROAD: Thank you. I appreciate that. Just looking at the lessons learned, because we are looking at recommendations –

Harriet SHING: Yes.

Gaelle BROAD: You have mentioned you have visited a lot of places, so you would be aware that there are people still living in caravans in many, many communities. What are the top three recommendations you would like to see for things that we could improve on in future?

Harriet SHING: Top three recommendations – okay. In the first instance there are still people living in accommodation, whether that is home at home in terms of caravans at a residence where people are waiting, for example, for insurance or for rebuilds to occur. There are also a number of people who are yet to be relocated from interim emergency accommodation. It is an ever decreasing number, but it is also the case that the floods augmented a number of issues around vulnerable members of communities, and there needed to be and there must be ongoing assistance to them. I think that as we work on this approach to continuous improvement – modelling and data and the interoperability between the resources and support provided by government to undertake flood studies and have flood management plans in place and to have early warnings and preparedness delivered in a way that is accessible to people – it is about making sure that we are adaptive and that we also ensure that communities build a measure of resilience through systems, through infrastructure and through coordinated decision-making that helps them in those hours of incredible vulnerability. So there is a lot in that.

My work as part of the portfolio is to make sure that I am conveying my very clear expectations around the work of water corporations and CMAs to provide information in an accessible format to people who live downstream or adjacent to our riverine environments and our waterways, and that we also make concerted efforts and active efforts to talk with people about the future of water management. Again, we are very much in a situation of climate volatility, and when we have one-in-100-year flooding events and when we have flooding events that are taking place in areas where previously we had not seen built-up density occurring, this is where, again, we need to have a comprehensively joined-up approach to decision-making: a joined-up approach to the sharing of information, to the issuing of warnings and to collaboration with agencies and with authorities – whether that is the Bureau of Meteorology or Emergency Management Victoria or local government. There is a lot in that, but I think what I would say is that continuous improvement needs to be measurable, it needs to be deliverable and it needs to be flexible enough to evolve over time, because we are not in a static environment regarding everything from climate, mean temperatures and the importance of water security to growing communities, including those who live and work and call our flood plains home.

Gaelle BROAD: You mentioned, Minister, the continuous improvement and that this is one of the most significant floods we have ever had.

Harriet SHING: Yes.

Gaelle BROAD: Do you feel, in retrospect, that the government should have announced a review or an after-action review soon after the floods, rather than leaving it to the parliamentary inquiry?

Harriet SHING: Well, there was actually a parliamentary inquiry after the 2011 floods. That was a parliamentary review that took place adjacent to the Comrie review, which, as you would be aware, resulted in the flood management strategy. The work to deliver on those recommendations was a part of both coalition and Labor governments. Again, we need to make sure that while there is ongoing work to improve continuously,

there are other processes that can take place. Melbourne Water has undertaken an independent review. The technical assessments have either been completed or are in the process of being completed for Eppalock and for Eildon. We continue to work with communities on flood management plans with local councils. So there is a continuous process of review that is taking place in all flood-affected communities with all levels of government around what we need to do, what we are doing and where there may be gaps. An external and outward-facing review such as that which the Parliament is undertaking through this upper house inquiry is one component of an ongoing discussion about identifying – it might be duplication in the system, it might be absence of systems, it may be timeliness, it may be modelling. Again, what these processes are designed to deliver is better understanding of what can be done to manage people and communities and lives and property in the environments that we are in.

Gaëlle BROAD: So is your department investigating the advantages that rural levees provide in protecting major arterial roads from flooding since the 2022 floods?

Harriet SHING: I know that you take a really keen interest in this, Ms Broad, as I do too. We have got a range of work that is occurring across the levee system, including reviews and opportunities to have an assessment of levees. CMAs are working alongside local governments and are coordinating with the SES. The levee system, as you know and as was identified in a range of reports and inquiries, rests around the idea of a beneficiary-pays model. This is also where, again, we have got levee responsibilities set out in that flood plain management strategy. We are working to understand where and how temporary levees from the 2022 floods may be able to be retained or removed. There are a range of components in that that make this into a complex set of considerations. That might relate to cultural heritage, biodiversity values assessments and the purpose of levees in the first place.

We have committed to an assessment, we have got business cases for possible new levees, and regional flood strategies are identifying a number of proposed new levees and looking at their feasibility. We will continue that work to secure funding for future business cases as that arises. Flood studies are also important, as are the implementation of those studies and a program to engage local landowners, builders and also industry as part of that levee assessment project, and that will include the issues that you have just spoken to.

Gaëlle BROAD: Okay. That is great. I am just interested in the Echuca–Moama–Torrumbarry flood study. When will that be finalised and made public?

Harriet SHING: We have a process that is being undertaken at this moment as part of work with VICSES and the council and community to determine the future of those works and the Torrumbarry levee. So since the flooding we have seen funding provided to CMAs to partner with local government and the VICSES to work alongside local communities on strategic assessments, and the Torrumbarry levee system will be considered in this project of assessment.

The CHAIR: Thanks, Ms Broad. Your time has expired. Ms Ermacora.

Jacinta ERMACORA: Hello and good morning again, and I am pleased to join the committee. Minister, you spoke about interoperability and how important that is between the water sector and emergency management in terms of managing the risk of climate change, and I know that certainly down in my neck of the woods post fires, the water corp, local government and fire brigades worked really well together to coordinate resources and practical skills to put out peat fires, as one example. So I just want to know whether, you know, that coordination in terms of emergency management and risk of climate change is something you are looking at.

Harriet SHING: The short answer to that is yes. It is definitely something that we are looking at. The incidence of floods and inundation across the state needs a response that is driven by a range of perspectives, whether that is in modelling or in data collection, whether that is in the development of flood studies to be incorporated into planning approvals processes, whether it is working alongside the SES and the Bureau of Meteorology, the issuing of warnings and the provision of information, the management of risk to critical infrastructure and understanding capacity building and changes to the way in which natural resource management occurs and decisions are taken. It needs everyone from the planning minister through to the national emergency minister and the work that happens from there right through to communities who are organising response and recovery efforts. So whether it is a neighbourhood house or the national cabinet, we

need to be ensuring that good data, good information, ever improving processes, funding and resourcing come together not only to understand risk but to mitigate it.

We cannot stop large volumes of rain coming into our system. The question is: how do we mitigate risk? How do we ensure that people are prepared and that communities have the sorts of decision-making frameworks that contemplate risk, and then how do we make sure that when flooding occurs we have adequate response frameworks in place to manage the broader issues? And again, this goes to public health, whether it is hypoxic black water, blue-green algae, the risk to health because of mosquito-borne disease, the impact on our environments or the management of public land. There is almost no portfolio across government that is not required to turn its mind to mitigation, management, preparedness and leaning into the challenges in practical terms and in informational terms that arise before, during and after flood events, as is also the case in bushfire. Again, emergency manifests in all sorts of ways that risk life and property. Our job as governments is to make sure that we understand to the best extent possible that risk and that we are helping people to make informed decisions and to get assistance in ways that will meet their needs and do so in the best possible way and in an ever improving way.

Jacinta ERMACORA: Thank you. On that, just specifically in the portfolio of local government, do you think local councils are being encouraged enough to ensure the risks of climate change and that sort of increased chance of extreme weather are factored into plans like flood management plans?

Harriet SHING: We are seeing increasing preparedness and indeed action from local government to incorporate climate preparedness into decision-making. We know that there are a range of councils who are amending planning schemes and approvals processes to take account of these factors. We have got a range of investments that have occurred to facilitate better work by local governments, preparing communities for future floods and also to implement actions which are ever more significant in a way that correlates to and, depending on your political viewpoint, is caused by climate change or contributed to or exacerbated by climate change. We have invested in locally prioritised flood warning systems in partnership with the Bureau of Meteorology, and we are coordinating implementation of regional flood plain management strategies. We are seeing water authorities such as Melbourne Water undertaking considerable work to address the impact of climate change, or the foreshadowed or likely impact of volatile climatic conditions, in the way in which it works in its authorising environment around discussions on planning matters.

We want to make sure that building flood resilience has also got the relevant level of resourcing, for example, in the FloodZoom model. We have invested more than \$5 million to make sure that we have got current flood maps and potential property impact data, river levels in real time, the latest advice and warnings from the bureau in one place and that that is available to flood analysts, which occurred in 2022. And we need to make sure that we continue to develop that in an outward facing way through improvements to the Digital Twin Victoria access to data for people to access and to understand as it relates to them. What I would also say, though, is the VICSES and VicEmergency app remains of crucial importance in helping people to understand where and how we are seeing risk arise in any natural disaster or emergency. We are moving ever toward a single source of information, which is what needs to occur, and this is something that will invariably include those elements of natural disaster and emergency in which climate change is a factor.

Jacinta ERMACORA: Yes. Fantastic. I know you have been out and about in the community, Minister. What are the key messages that you are hearing and taking away from those visits?

Harriet SHING: That communities are exhausted – communities are still reeling in many ways from the impact of the floods and the extreme and significant major flooding that occurred; that in rural and regional Victoria there is a sense that the impact of floods is not understood beyond their immediate region or catchment; that preparedness requires a range of partnerships; that resilience will take time to rebuild because of that fatigue; that management of our natural resources requires us to understand the importance of the water storages on the one hand and of flood mitigation on the other; that a joined-up approach is necessary; and that we have seen significant improvement in the way in which local, state and federal governments work together since the last flooding event and the flooding event before that and the one before that, but that we cannot stop the work and no-one should stop the work. We must continue to improve.

It is also important to recognise the relevance and the value of long-term engagement and investment. We can understand risk and provide resourcing and funding at this point in time to address what we know or can

contemplate to be risk, but that work needs to continue. And this is also about making sure that communities are not feeling that they have been left behind and are given the relevant level of respect and of recognition that they deserve, not just from one portfolio but from all portfolios. We have seen it from people from the Premier, who calls the Bendigo area and the impacted area around Elmore home, through to the Deputy Premier and the then Minister for Housing. The Minister for Local Government has been incredibly proactive in that space around everything from waste transfer to engagement on flood studies. That work needs to continue. It is a whole-of-government effort, and that is exactly what we will do in the work going forward.

The CHAIR: Thanks, Ms Ermacora. Dr Ratnam.

Samantha RATNAM: Thank you, Minister, for being with us here today. Just a quick question – I have got a few questions so I would appreciate as brief an answer as possible. Firstly, in terms of the role of the minister and the government regarding Melbourne Water, where does it start and where does it end in terms of governance and oversight responsibilities in Melbourne Water?

Harriet SHING: I touched on some of this in my opening comments. We support Melbourne Water to undertake a range of functions that sit with it under the *Water Act*. So when we are talking about the distinction between operational matters and policy matters, that is where they sit with Melbourne Water and with government respectively. Melbourne Water provides a range of actions and investments and engagements in everything from the way in which drainage and stormwater are managed to the cleanliness and health of our waterways to the work that it does to interact with a really growing part of the world, and it partners with about 38 councils across the catchment to make sure that people have that interface. Melbourne Water has also – and it is transitioning away from this work – done work in the assessment of flood risk. As part of the review and as a consequence of its work since October, it is transitioning that work through to the Bureau of Meteorology.

Samantha RATNAM: Sorry, Minister, I am just asking particularly in terms of the role of the government. So in terms of oversight and governance responsibilities, I am interested to know where the government's role sits. And connected to that, are you confident in the oversight and auditing role that the government is playing with Melbourne Water in terms of the responsibility you have? Are you confident that that oversight and auditing work is occurring? Particularly if there are issues – for example, issues of inconsistency or questions about the performance of Melbourne Water – what role do you have to intervene in that regard? Do you have a role?

Harriet SHING: Melbourne Water is the designated flood plain manager, so they are responsible for those engineered flood mitigation structures. We have an expectation that Melbourne Water will meet its obligations around responsibilities that it has under the flood plain management requirements and the strategy. They are also responsible for regional drainage services, as I said, flooding and waterways –

Samantha RATNAM: Sorry, Minister – what happens if they do not perform those responsibilities? Do you all have a role? It is just a question of if you all have a role or not. If you say, 'There's no role for us,' that is fine, but do you all actually have a role if they are not implementing those responsibilities fully?

Harriet SHING: I set out a range of expectations –

Samantha RATNAM: You set expectations, yes.

Harriet SHING: yes, for Melbourne Water around meeting their obligations. It may well be around planning, around flood modelling and forecasting, around drainage and development of service schemes and planning scheme amendments. But Melbourne Water is not responsible for a range of things, and that is really important to cover off as well, because I cannot as water minister reach into things like issuing of warnings or issuing decisions on planning or building permits or recovery because Melbourne Water does not do that work.

Samantha RATNAM: Of course. But in terms of the expectations you set, do you have a responsibility therefore in terms of managing whether those expectations are met?

Harriet SHING: I have a responsibility to satisfy myself that Melbourne Water is undertaking its operational work under the Act and as a designated authority. It is also important, however, to note that Melbourne Water needs necessarily to be able to undertake its technical work and its operational work at arm's length from the government.

Samantha RATNAM: Understood, yes. I just wanted to know the extent of the –

Harriet SHING: So I just want to make that abundantly clear: I do not reach into the operational matters of Melbourne Water.

Samantha RATNAM: Understood. I was just checking about what the check-and-balance mechanism is if expectations are not met. Just connected to that question, we have had quite significant evidence through this inquiry about questions about reliability of the model. We have had very different views, some of Melbourne Water saying that they believe their modelling was accurate and appropriate, other witnesses suggesting that it was not. Relating to that body of evidence that is before us, recommendation 3 of the independent reviews panel, the Pagone report, states that:

Melbourne Water should ensure that their rating curves, which represent the relationships between river levels and corresponding river flows, extend also to rare and extreme flood events and have been derived using established best-practice.

You might need to take this question on notice, which is absolutely fine. Regarding that recommendation the committee has heard of a major flood on 18 September 1975 on Deep Creek at Darraweit Guim even higher than the May 1974 flood, which is backed up by the rural water corporation blue books flood data records. We understand that the September 1975 flood at Darraweit was similar in magnitude to the October 2022 event. But Melbourne Water's consultant Jacobs rejected the existence of this flood largely on the basis that there was no data available from the relevant gauge for this data. To resolve that inconsistency, are you able to take it on notice to undertake some sort of inquiry? Because this goes to the integrity of the modelling that we are relying on and looking at the role of the government to oversight that.

Harriet SHING: Let me see what I can do by way of providing a response. I am not sure what you mean by 'inquiry', so I do not want to pre-empt or give you the expectation that this will be a far-reaching inquiry of the magnitude that we are dealing with right now.

Samantha RATNAM: Inquiries – make inquiries.

Harriet SHING: Yes. Let me see what I can provide to you. I will take that one on notice.

Samantha RATNAM: Great, thank you very much. Connected to a question that Mr Ettershank raised as well, the Melbourne Water flood inquiry recommended that flood models be reviewed every five years and updated at least every 10 years and after a major flood. Melbourne Water has responded by saying that they will update flood modelling every 10 years. Will you now require modelling to be reviewed every five years, in line with that recommendation, right across the state?

Harriet SHING: The panel recommendation was for flood models every five years, you are right, and updating every 10. Melbourne Water in the first instance has committed to updating all of their flood modelling across Port Phillip and Western Port by 2026 and they have necessitated an uplift in funding. It is about \$14 million over the five-year period, up from \$3 million to 4 million. Melbourne Water is also adopting the panel recommendation to update flood models every 10 years. Really importantly though, flood studies are something that we have funded, including through an additional \$5 million just this year, to make sure that those councils that do not have up-to-date flood studies are able to get them done and get them done quickly. There is a significant motivation for councils in flood-affected areas to make sure that they are providing support to affected communities, that they are delivering on strategies and studies and plans and that they are incorporating them into planning approvals frameworks. That work is happening, and it is my expectation that we are able to continue to partner with local councils and to work alongside that planning piece to address that risk and to make sure it is part of that.

Samantha RATNAM: I have got a question related that to that actually, but I might come back to it. So just regarding the five-year recommendation, yes, Melbourne Water says, 'We will update the flood modelling every 10 years,' but the recommendation was also that the models be reviewed every five years. Are you undertaking to work with Melbourne Water to ensure that recommendation is implemented in full, with the five-year review plus the 10-year updates?

Harriet SHING: Melbourne Water, as I responded to Mr Ettershank's question earlier, is in the process of updating its flood modelling and understanding what risk assessments look like. That work is ongoing now. I am looking forward to seeing that completed with the relevant level of attention to detail and efficiency. As I

have also said in response to Mr Ettershank, there are a number of different components that are relevant to this work. It is technical work but it also interfaces, obviously, with a range of other schema, including planning.

Samantha RATNAM: Does the government have a view on the five-year review of the models? There is 10-year updating, but then there is a five-year review of models that is recommended. Does the government have a view on whether Melbourne Water should do those five-year reviews?

Harriet SHING: It is my expectation that in indicating that it agrees or agrees in principle with all of the recommendations from the Pagone report that Melbourne Water will acquit its position, as it is committed to, on that review.

Samantha RATNAM: Minister, residents whose homes were flooded by the Maribyrnong were told several days after wading through the floodwaters that they had been classified as black water due to sewage and heavy metals and anything which had been touched by them should be thrown away. Others were told that the risk was minimal. Can you explain, Minister, the inconsistent information given to residents and what the government is doing to ensure that these inconsistencies are resolved for future events?

Harriet SHING: I am not across the detail of the example you have referred to on either hypoxic black water or contamination. We do need to make sure that public health and safety are at the heart of absolutely everything that we do. Where there may have been notifications, where there were boil water notices or notifications for people not to enter floodwaters – and no-one should ever enter floodwaters – they were based in information around testing that may vary from place to place within the same catchment.

Samantha RATNAM: Are you looking into the inconsistencies, is my question, for future events?

Harriet SHING: Sorry, I would not necessarily accept they are inconsistencies if they occurred in different parts of the affected area.

Samantha RATNAM: That is what we understand – that is what we have been told. That is what was being told by residents, that there were inconsistent messages, and I am wondering whether the government is looking into why those inconsistencies occurred and what can be done in future to prevent them.

Harriet SHING: Why don't I see what I can provide, just because if they were at different areas –

Samantha RATNAM: Yes, happy for clarification.

Harriet SHING: of the flood-affected catchment, that may not be inconsistent. It may just be that there were different warnings or notifications around how people should manage the risk to health or to safety across the flooded areas.

Samantha RATNAM: Thank you.

The CHAIR: Thanks, Dr Ratnam. Ms Lovell.

Wendy LOVELL: Thank you. Minister, the Goulburn upper catchment – the farmers there have been flooded three times since October 2022, twice this year. In the Murray–Darling basin plan, the requirements for over-bank flooding will see them flooded in about seven out of 10 years, which I am sure you would agree will create unsustainable losses to their businesses. I am aware that you have been doing work around the constraints policy, and I am just interested to know whether you will abandon the relaxed constraints policy, which creates man-made, manipulated major flood flows which inundate those landholders.

Harriet SHING: Well, it is not our policy, Ms Lovell, to inundate land and to encroach upon private landholdings, and that is the position that I have made really, really clear. As far as constraints are concerned, there has been a constraints consultative committee and there has been an interim report, and I am looking forward to the resolution of the committee's considerations. They have done a power of work around what the impact of flooding on private land looks like. Again, when we are talking about flood plains, water does not care whether it is private land or the public landholding, and it does not care whether it is Victoria or New South Wales. The Commonwealth has indicated very clearly that it wants to see constraints and a relaxation process to ensure that a highly modified river system can be developed to deliver environmental benefit. I am continuing to work alongside the Commonwealth to talk about what benefit can be brought. But again I have

been really clear with members of the consultative committee, who I have met with couple of times now, about the work that they do and how important that is to future decision-making on constraints.

Wendy LOVELL: Water may not differentiate between private land and public land, but government policy certainly can –

Harriet SHING: It certainly can.

Wendy LOVELL: and I would hope that you are looking to a policy that does not inundate private landholders.

Harriet SHING: Well, I have been really clear about, again, the policy is that we are not going to impose inundation on landholders. Obviously that is a really important part of the position that we have taken on constraints. I have continued to be in discussions with people who live in and around those communities, who farm in those areas, and they are at the heart of the work that I am continuing to do, including on the interim report and on the consultative committee's positions.

Wendy LOVELL: Right. Minister, will you guarantee that the consultative committee's reports and any minority reports are made public?

Harriet SHING: Well, it is interesting. We actually saw an interim report being released that I had nothing to do with – that was unfortunate. I would like to see that we can actually get a response to that report. I will be guided by the consultative committee and its work and its position on what a summary or what a position might look like. Again, this is about partnering with communities. It is about making sure that the very members who sit on that committee are the people who are involved in food production at the heart of the work that we do. Again, my policy position, the government's policy position, has been unchanged on constraints for many years now.

Wendy LOVELL: I did not ask about consultation and policy, I asked about the releasing of the report. Will you guarantee the reports will be made publicly available?

Harriet SHING: I am not going to guarantee a position here at this committee hearing. What I am going to do, though, is say that we continue to work with – and I continue to work with – landowners and consultative committee members and communities who are in and around those areas where constraints are sought to be delivered.

Wendy LOVELL: Thank you. We are now in the cyclone season. Victoria is bracing for another intense weather event in a few weeks. Have you instructed Goulburn–Murray Water to leave any airspace in dams? Currently Lake Eildon is at 98.6 per cent, and landholders along the Goulburn –

Harriet SHING: Dams or water storages?

Wendy LOVELL: Well, water storages. Currently Lake Eildon is at 98.6 per cent, and landholders along the Goulburn are at extreme risk due to the weir having 30 per cent environmental water in it, which is not used in its entirety in any one year, and there being virtually no airspace in that dam – or in that water storage.

Harriet SHING: Sorry, what was the question, if you can just –

Wendy LOVELL: The question is: have you instructed Goulburn–Murray Water to leave any airspace in the water storages to compensate for the intense weather event that we are expecting?

Harriet SHING: For cyclones?

Wendy LOVELL: Tail ends of cyclones always create rain events, and Victoria is currently expecting one in a few weeks time.

Harriet SHING: I suspect that where you might be going on this is the use of storages for flood mitigation. Water storages are not built for flood mitigation. They perform an element of flood mitigation. We did see during October that there was work to provide landowners and people living downstream with information, but it is also really important to note that Eildon, for example, performed a measure of flood mitigation simply

because the inflows were far greater than the outflows. Controlled releases then figure into that equation. I am not sure how cyclones feature in that. The longer term modelling that we have with the declaration of El Niño indicates hotter, drier periods and lesser rainfall, albeit with what we know to be volatile rain events. I do not know how to address a question that does not necessarily relate to water.

Wendy LOVELL: Well, it does. It is rainfall – it is expected rainfall in this state in the next few weeks and the level of the water storages at the moment and the impact that that will have on the landholders that are in the upper catchment.

Harriet SHING: Right, okay. I have been thrown a bit by the cyclone reference, so I am just going to perhaps put that to one side and talk about future large-scale rainfall events. When we look at what happened at Eildon and the gated spillway dam in the floods, we saw the flow through the gates peaking at 38,000 megalitres a day into the Goulburn and 140,000 megalitres a day at Seymour. At Shep it was 180,000 megalitres a day. So there was significant reduction in the impact of downstream flooding. As we also know from the technical assessment at Eppalock, in order to create a measure of tangible impact on flooding there would need to be a reduction in volume and a creation of airspace – a reduction in volume down to about 70 per cent. So again, there are a few elements in what you have talked about there around what would happen to that water and to the entitlement to water that is held by licence-holders for a range of reasons – and that includes food producers as well – compensation and again the priorities that people are identifying around water security as we face those hotter, drier conditions.

Wendy LOVELL: Okay. I am glad you referred to the 38,000 megalitres there, Minister, because the farmers in the upper catchment were told that the releases from Eildon would remain at 12,000 megalitres a day. They were told that late in the day, at 11 pm that night, and I cannot remember the exact date off the top of my head. Goulburn–Murray Water increased that to 38,000 megalitres, with no notice to many of the landholders. These landholders woke at 3 am to find that they were flooded out. Prior to that event landholders in that area had been ringing Goulburn–Murray Water advising them to release water earlier than they started to release it. They knew these floods were coming. Again, at Loch Garry there were landholders that are part of that scheme who were advising Goulburn–Murray Water to pull the bars earlier. Goulburn–Murray Water of course did not get those bars out, and the levee banks blew out, inundating people who were not even in the flood area, and that water lay around in houses for up to six weeks. Minister, what measures have you explored or implemented since the floods to ensure that local knowledge is better recognised next time?

Harriet SHING: Okay, so there are a few things in what you talked about there. Why don't I start with Goulburn–Murray Water –

The CHAIR: Just a minute and a half to go.

Harriet SHING: and the work that it did in releases from Eildon. The releases overnight, as Goulburn–Murray Water has indicated, did catch people by surprise, and that is why they took greater consideration of the timing of the day in which those releases occurred after the floods. So when we had the high rainfall event in October this year, Goulburn–Murray Water was required to release up to 17,000 meg a day from Lake Eildon, and they were scaled up over several hours. That is an example of the sorts of modification to process that are intended to address community concerns, such as the issue that you talked about. Waking up to find vast volumes of water is incredibly distressing, and this is where Goulburn–Murray Water commenced the scale-up in that instance in October this year from 9 am in response to feedback that was received from local landowners.

On Loch Garry, GMW has finalised the establishment of a community reference group on the future of Loch Garry. The committee recommended a couple of actions around GMW sending out SMS notifications, that bars will be removed once the flood level reaches 10.36 metres at the Shepp gauge on the Goulburn River and that when the Bureau of Meteorology predicts the Shepp gauge will exceed 10.36 metres but not 11 metres, GMW will send out a notification to customers that bars will start to be removed 24 hours after the Shepp gauge reaches that level of 10.36. So the committee endorsed a revised set of operating rules that was then endorsed by the GMW board.

The CHAIR: That is time. Thank you, Ms Lovell. Ms Watt.

Sheena WATT: Thank you for being here today, Minister, and apologies that I missed your opening remarks. I just have a couple of questions. And if you indeed have covered them in your opening statement, please let me know and I will be happy to go to the next one. I will start with the Pagone review into Melbourne Water's response to the Maribyrnong flood event, noting that Melbourne Water has accepted all the recommendations. Can you talk to me about the government's commitment to working with Melbourne Water to ensure the appropriate implementation of –

Harriet SHING: Sorry, do I have a –

Sheena WATT: Will the government work with Melbourne Water, or are they currently doing so, to ensure that all recommendations are appropriately implemented to support the findings?

Harriet SHING: So firstly, yes, Judge Pagone has done an extraordinary amount of work to deliver on the independent review and its recommendations and findings. And alongside the panel, he and they are to be thanked for their work. It has helped us to really determine the impact of the flood, the facts about the flood, and it has then pivoted into work that Melbourne Water has said that it will undertake around further assessments and updates to an understanding about impact, whether it is of the flood wall or whether it relates to Arundel. I am looking forward to supporting Melbourne Water in implementing those recommendations. Again, back to Dr Ratnam's question earlier, Melbourne Water does undertake its operational work at arms length from the government; however, I have been really clear about the importance of understanding from government's perspective the progress of those recommendations being met. The work that we are doing to close out questions of clarification goes on. I have continued to be updated and briefed by the DEECA team as part of understanding what the impact of flooding looks like for that catchment.

Again, it is also about multiple levels of government. We have got 38 councils across Melbourne Water's catchment. These are areas with various needs and various priorities around managing public health and safety risk. It was Melbourne Water that conducted the independent review. It is not something that I was involved in, and appropriately so. It is really important that the work in the independent review is recognised as being really helpful for determining some crucial facts about the flood and also informing those longer term actions, which I spoke to earlier in response to other questions.

This work will go on. Melbourne Water has provided a comprehensive response to that work along with time frames for the next steps of what it will be doing, whether that is about updating ratings tables, about the provision of information to people across the catchment, flood modelling studies or the work that they are also already doing. There have been a number of recommendations from the panel that take account of climate change and the impact of climate change on flood levels and planning and development. This is the sort of work that is happening, including as it relates to the flood overlay and to making that work consistent with, for example, Australian flood and run-off guidelines – so understanding what Melbourne Water is doing already, how they can augment that or make it clearer or incorporate it into broader decision-making frameworks and then also continuous improvement.

The 2022 floods were for many people unprecedented, and as much as anything that is because of the development that has occurred in and around flood plains across the Melbourne Water catchment. So there is a lot of work that needs to be done to update that flood modelling, and I think that that is of key importance there alongside transitioning work to the Bureau of Meteorology and making sure that that faster forecasting and transition of riverine flood modelling is of central importance to the work that will stand us in better stead to understand and mitigate risk.

Sheena WATT: Lovely. Thank you. Going on to the role of water corporations, there is an expectation that water corporations should be providing more warnings in terms of floods, and we have heard that from previous witnesses. My understanding is storage managers like GMW feed information about releases and spills from storages into other agencies like the Bureau of Meteorology and emergency services, who then forward those warnings on through VicEmergency and the bureau. Do you think this remains the most appropriate way to approach emergency flood management? I am just talking about the sort of flow of information and warnings and if in fact there is room for improvement there.

Harriet SHING: Yes. There are a range of data sources that inform the warning systems, and we know – and this is something that I suspect you will be well equipped to ask the Minister for Emergency Services when

she appears – that VicEmergency, emergency broadcasters and emergency alert systems as well as those local, automated warning systems, so sirens and speakers and roadside signage, are important, and face-to-face meetings and community discussions and those virtual town hall meetings are of crucial importance. When we have the total warning system application to flood, there is broad guidance to have a total warning system around monitoring rainfalls and river flows where they might lead to flood; prediction of flood severity and the time of onset for particular levels of flooding; the interpretation of predictions to determine likely flood impacts on the community; construction of warning messages describing what is happening, what will happen, expected impact and what actions will be taken; and the issuing of warning messages and response to warnings by agencies and communities.

We had a water cell – so a team within the State Control Centre – that was joining that information from communities, from catchment management authorities into a large operation that brought together everyone from our SES through to local government through to the Department of Defence. Making sure that water was part of that also meant that in local incident control centres water was there as well. Coliban Water was embedded into the ICC and provided input into that work.

So that is happening already. We also need to make sure, though, that we have a consistent approach to the delivery of warnings. And that is where information can be gathered, including through councils around what risk looks like simply because people are on the ground, through to gauges and the work that we do in our joint funding arrangement between the state and the Commonwealth to provide gauges to communities to meet need. Again, in Molesworth there is a gauge that is coming online shortly to understand how risk is escalating or changing over time, and that is then fed into the centralised distribution of information. The last thing that anybody needs to have to do in a situation of high distress and great uncertainty is to have to look for information from a variety of different sources.

Engagement with people about the impact of recovery and what that means by way of assistance, again, can come through a range of organisations. It might be local council with the waste transfer work. It might be the work that happens to restore connections or to issue boil-water notices or to make sure people are aware that their sewerage and wastewater treatment networks are maintained. That is the operational part of the work. The warning system, I think, is probably something to direct to the Minister for Emergency Services, noting, however, that the water sector does contribute the data and the information around risk and that FloodZoom and the digital twin platforms are a big part of that work as well.

Sheena WATT: I appreciate that. I have got 1 minute, did you say? Thanks, Chair. I will in fact, I think, follow up with that recommendation, and some of those questions are more appropriately directed to the Minister for Emergency Services, who we have got later this afternoon. I wanted to go to my last question, which is around the Victorian streamflow gauging network. Based on the experiences of the 2022 flood event, what improvements are being considered to further strengthen our network right across the state and enhance its role in warnings and response?

Harriet SHING: Do you mean in terms of the flow of information?

Sheena WATT: Yes, actually.

Harriet SHING: We want to make sure that –

Sheena WATT: I am sort of reflecting on previous witnesses that have made comments about that.

Harriet SHING: Okay. Have you got specific references from earlier witnesses?

Sheena WATT: No – it was Gippsland.

Harriet SHING: Okay. I will touch on Gippsland and the work that has been done on flood plans and flood studies. When we look at Trafalgar, we look at the Bunyip or we look down to Traralgon, floods have necessitated the distribution of information in a consistent and accessible way that requires continuous improvement. We need to make sure that people have the information that they need and that they are getting it in a timely fashion. As that relates to emergency management, I will leave that for the emergency services minister perhaps to address. But there has been a range of investments, again, in the FloodZoom platform, in the Victorian flood plain management strategy and the acquittal of those recommendations and also in making

sure that the interoperability work is informed by data provided to the Bureau of Meteorology, warnings issued by the SES and by Emergency Management Vic and what those early warning systems look like and then partnering with local government.

When we had the Briagolong flooding events, we saw that the Wellington Shire Council was actively involved in providing information on the rising water levels at the Port of Sale and the risk of inundation for homes in around the Tinamba and Newry area. There were, as I recall, three inundations, but people had good information at that point of risk to help them to make the decisions that they needed. Not everybody got what they needed, but that interoperability shows that we are getting better at doing exactly that and providing people with what they require for their specific circumstances.

The CHAIR: I might leave that there, because it is time.

Harriet SHING: Sorry, yes.

The CHAIR: That is all right. Ms Tyrrell.

Rikkie-Lee TYRRELL: Thank you, Chair, and thank you, Minister Shing, for appearing today. Prior to the BOM's heavy rainfall prediction in late September 2022, what were the storage capacities in Hume, Eppalock, Dartmouth and Eildon?

Harriet SHING: I might take that on notice, Mrs Tyrrell. I do not want to misrepresent any of the storage levels and rainfall reports. We did have lower levels of water in many of our catchments off the back of drier years, but I will take that on notice as far as our storages at the time of the floods. I know that last year we had – so Eildon as at 5 December had 98.5 per cent and Eppalock had 101.5 per cent. I think you said –

Rikkie-Lee TYRRELL: Hume and Dartmouth.

Harriet SHING: Yes. Hume, 95.4 per cent; and Dartmouth, 100.9 per cent. That is based on the data that I have across our Victorian dam storage levels.

Rikkie-Lee TYRRELL: So this is in December, did you say? In 2022?

Harriet SHING: This time last year.

Rikkie-Lee TYRRELL: Okay. Let us say Dartmouth was at 101.3 per cent prior to the predictions in late September; Eppalock, 98.5 per cent; Hume, 96.3 per cent; and Eildon, 97.2 per cent – what flood mitigation measures were taken when the BOM gave that heavy rainfall prediction in late September?

Harriet SHING: In late September this year?

Rikkie-Lee TYRRELL: Of 2022, sorry.

Harriet SHING: Across all of the catchments?

Rikkie-Lee TYRRELL: Yes. Just those four – Hume, Eppalock, Dartmouth and Eildon. When the prediction came in in late September 2022 that there was going to be a lot of rain, what flood mitigation measures were taken?

Harriet SHING: Well, there was the preparation of levees. Is this a sort of – sorry, you are talking about the Bureau of Meteorology and warning systems and provision of information but then mitigation?

Rikkie-Lee TYRRELL: So knowing that there was going to be a lot of rain coming and the dams were quite full or even above capacity, were there any flood mitigation measures taken? Were there any water releases? What did you do, knowing that information?

Harriet SHING: Right. Yes, okay. In the event of a forecast large rainfall event the water authorities and CMAs – where there is, for example, joint responsibility; Coliban and GMW, for example – will actually look to what that forecast means. Obviously the further out you get from a forecast, the less reliable it is, but when there are large-scale rainfall events being forecast, there can be planned releases to reduce the impact of or the likelihood of major flooding through spillways or crest dams and storages. That work is considered very

carefully in consultation with the hydrological data and the advice that is provided, the projections and – this is where flood modelling and studies are so important – the rainfall and where it is going to occur.

You may recall that this year Lake Eppalock did not sustain the inflows that Eildon did, for example, and that was due to late-breaking movement of the rainfall from one part of the catchment to another. I am happy to give you some detail of what happened across each part of the catchment. There were warnings. There is provision of information to people in those affected areas. Authorities were also pretty clear in the provision of information about supports and about information being provided. Even in the days after the 2022 floods, when I met with chairs and CEOs of water corporations and authorities, I was really clear about the importance of information being provided in a range of different ways, and the Bureau of Meteorology has been a big part of that. So why don't I get some further information for you on notice about what was provided across each part of the catchment. I suspect that might be of greater use to you than speaking in a generality.

Rikkie-Lee TYRRELL: I just wanted to know what actions were taken in the lead-up to flood to make sure that all the actions were taken.

Harriet SHING: So planned releases, and in the same terms that I answered Ms Lovell and her question before around what those releases looked like, Goulburn–Murray Water worked really closely with landholders and had a series of engagements around the timing of those releases. The quantum of those releases was adjusted to address the issue of risk and of projected rainfall. It was ultimately a situation that evolved in real time, so it was a day-to-day proposition around what the likely releases would look like and providing information to communities who might be impacted by those releases and by that greater volume of water coming downstream.

Rikkie-Lee TYRRELL: Do you think that there could be any changes in the way that we manage our water that could prevent such a large-scale flood in the future, like the 2022 floods?

Harriet SHING: The way that we manage our water?

Rikkie-Lee TYRRELL: The way that legislation or policy – certain changes that could be made in the structure of water.

Harriet SHING: Right. When we think about it, again history has got a really important role to play in this. The water storages as they were built – let us take Eppalock, for example. It was built between about 1960 and 1964. This is a fixed-crest spillway that is a relatively small storage. It was not built to mitigate against flooding. It does perform an element of that role simply because inflows may well exceed outflows, and that then reduces the volume of water going downstream into areas like Rochester. I think that we are bound to find the right balance in managing water storages for the purpose of supply – again, against a drying climate and a growing population – and managing the risk of future flooding events. That requires a range of considerations, whether they are socio-economic impacts or whether they relate to infrastructure changes and to operating rules, and this is where, again, the technical assessment that has been undertaken for Lake Eppalock is now the subject of community consultation. That was a hydrological assessment, a technical assessment, and then there are further conversations from there about what the community's view is on that. We also know that in the case of levees, for example, there is often not a social licence or the relevant level of community appetite to build levees in areas where they will be there in advance of high flood probability. So we need to work through social licence, socio-economic impact, environmental impact and again the importance of making sure we have got a security of supply, because in the long term we are using more water than we are receiving. We have to get better at managing the resource to meet that demand, and that is in flood-affected areas, yes, but then all over the state.

The CHAIR: Two minutes.

Rikkie-Lee TYRRELL: Okay, thank you. During the inquiry we have heard a lot of people mention that there are not enough gauges along the waterways. Is there any commitment from the government that would enable us to see a few more gauges being placed for earlier warning systems in the future?

Harriet SHING: We have done a lot of work to understand what it is that councils have identified as their priorities for the delivery of gauges, and when I have met with councils they have been pretty clear about where and how they might get benefit from a gauge system. We have got around 780 active river-level and rainfall

gauges across the state. They are maintained through two regional water monitoring partnerships, and that is DEECA, local government, CMAs, Melbourne Water and also other water corporations with an interest in the use of gauge data. Around 283 of those gauge sites are used primarily for flood warnings, and they provide real-time data on river height. There are other sites that provide backup data for flash flood information. So gauges do not actually provide the warning; they provide the data that goes into an assessment. And the flood plain management strategy does provide that construction of new gauges will be eligible for government funding if a flood study shows that an improved flood warning service for the benefiting community will follow. We have got, for example, through the basin constraints feasibility study an identification of new streamflow gauges and rainfall gauges in the Goulburn catchment – and the Molesworth gauge is one of those sites across 11 sites – and we are working to complete the necessary approvals for that process. The funding for gauges is split between state and Commonwealth governments, and councils then assume the responsibility for the operational management of those gauges. And it is really important to make sure that we have got access to a pool of portable monitoring gauges. They are temporary and can be deployed too, to collect data in the interim while we develop that permanent equipment.

The CHAIR: That is time. Thank you, Mrs Tyrrell.

Rikkie-Lee TYRRELL: Thank you.

The CHAIR: One last question, which you may wish to take on notice. The updated flood modelling that we are getting from Melbourne Water – can you provide on notice whether that will be peer reviewed before it is released, per the Pagone recommendation?

Harriet SHING: Yes. It is really important that as we move to get the best possible understanding of where and how flood events might affect communities and property and public health and safety that we have a really rigorous process around assessment of source material, incorporation of data and then incorporating that in Melbourne Water's work as an authority into planning decisions. It is an integrated approach, though, and it is a complex one, but the short answer is yes.

The CHAIR: Excellent. Thank you, Minister, for joining us today and for your comprehensive evidence. You will receive a copy of the transcript for review in about a week, before it is published, and the committee will now take a short break.

Witness withdrew.